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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,591	11/22/2005	Kenya Yokoi	R2184.0443/P443	1994
24998 7590 04/22/2008 DICKSTEIN SHAPIRO LLP 1825 EYE STREET NW Washington, DC 20006-5403				
EXAMINER				
BIBBINS, LATANYA				
ART UNIT		PAPER NUMBER		
2627				
MAIL DATE		DELIVERY MODE		
04/22/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/541,591

**Applicant(s)**

YOKOI ET AL.

**Examiner**

LaTanya Bibbins

**Art Unit**

2627

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,7,8,10,12,16,17 and 19 is/are rejected.
- 7) ☒ Claim(s) 2,4-6,9,11,13-15,18 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/7/05, 1/5/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

2. The abstract of the disclosure is objected to because of its undue length. Applicant is reminded of the proper format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet **within the range of 50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. Correction is required. See MPEP § 608.01(b).
3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 7, 8, 16, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

6. **Claims 7 and 16** recite the limitation "each recorded second test pattern." There is insufficient antecedent basis for this limitation in the claim. In the interest of compact prosecution, Examiner will interpret "each recorded second test pattern" as "each recorded test pattern."

**Claims 7 and 16** also recite the limitation "the optimum recording power." There is insufficient antecedent basis for this limitation in the claim. In the interest of compact prosecution, Examiner will interpret "the optimum recording power " as "an optimum recording power."

**Dependent claims 8 and 17** do not resolve the 35 U.S.C. 112 first paragraph issues of independent claims 7 and 16 recited above and are therefore rejected as incorporating the deficiencies of the claims upon which they depend.

#### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1, 3, 7, 10, 16, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Morishima (US PGPub Number 2003/0035355 A1).**

**Regarding claim 1**, Morishima discloses an information recording method of recording information by forming recording marks by emitting light, from a light source

on a record medium, modulated according to record information and rules by use of  $n$  ( $n$ : integer more than one) type data length sets which are classified by a data length of record information such that the rules of recording waveforms thereof are different, comprising: a first trial write step of writing as a trial a predetermined first test pattern in a trial write area of the record medium while changing a recording power for emitting in a stepwise manner, so as to obtain an optimum recording power from a reproduced signal of recorded trial write data (paragraphs [0040] and [0041] and Figure 3); and a second trial write step of performing trial write in the trial write area of the record medium by use of the optimum recording power by using a second test pattern corresponding to each of the data length sets while changing pulse width or pulse edge position of recording waveform for each of the data length sets in a stepwise manner, and obtaining an optimum pulse width or optimum pulse edge position of the recording waveform corresponding to each of the data length sets from a reproduced signal of each recorded second test pattern (paragraphs [0048], [0060], and [0061] particularly the discussions regarding the stepwise interpolation of the record strategies and the time axis adjustment, and the illustrations in Figures 11 and 12), wherein information is recorded based on the optimum recording power obtained in said first trial write step and the optimum pulse width or optimum pulse edge position obtained in the second trial write step (see step S7 of Figure 2 and the corresponding discussion in paragraphs [0052] and [0055]).

**Regarding claim 3,** Morishima discloses the information recording method as claimed in claim 1, wherein the first test pattern is a data series including all data

lengths (see Figure 6 and the discussion in paragraphs [0040], [0041], and [0048]), and wherein the second test pattern has a predetermined data length, and is a data series that constitutes the  $n$  type data length sets (see the discussion in paragraphs [0060] and [0061]).

**Regarding claim 7**, Morishima discloses an information recording method of recording information by forming recording marks by emitting light, from a light source on a record medium, modulated according to record information and rules by use of  $n$  ( $n$ : integer more than one) type data length sets which are classified by a data length of record information such that the rules of recording waveforms thereof are different, comprising: a trial write step, provided separately for each of the data length sets, of performing trial write in a trial write area of the record medium by use of an optimum recording power by using a test pattern corresponding to each of the data length sets while changing pulse width or pulse edge position of recording waveform for each of the data length sets in a stepwise manner, and obtaining an optimum pulse width or optimum pulse edge position of the recording waveform corresponding to each of the data length sets from a reproduced signal of each recorded test pattern (paragraphs [0040], [0041], [0048], [0060], and [0061] particularly the discussions regarding the stepwise interpolation of the record strategies and the time axis adjustment, and the illustrations in Figures 11 and 12), wherein information is recorded based on the optimum pulse width or optimum pulse edge position obtained in each trial write step (see step S7 of Figure 2 and the corresponding discussion in paragraphs [0052] and [0055]).

**Claims 10, 12, and 16** are drawn to the information recording apparatus corresponding to the method of using same as claimed in claims 1, 3, and 7 respectively. Therefore information recording apparatus claims 10, 12, and 16 correspond to method claims 1, 3, and 7, and are rejected for the same reasons of anticipation as used above.

**Claim 19** is drawn to the record medium corresponding to the method of using same as claimed in claim 1. Therefore record medium claim 19 corresponds to method claim 1, and is rejected for the same reason of anticipation as used above.

***Claim Rejections - 35 USC § 103***

**9.** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**10.** ***Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima (US PGPub Number 2003/0035355 A1) in view of Kirino et al. (US Patent Number 5,590,111).***

**Regarding claim 8,** Morishima discloses the information recording method as claimed in claim 1 or 7 as noted in the 35 U.S.C. 102(b) rejections above. Morishima, however, fails to disclose, while Kirino discloses wherein the data length sets are classified according to a remainder of division of the data length of the record information by the integer n, and the data length sets have, as a data length

corresponding to a clock cycle T of the record information, a rule by which a pair of a heating pulse and a cooling pulse is added for each nT multi-pulses constituting the record waveform of the n type data length sets (see Figures 17 and 18 and the discussion in column 13 line65 to column 14 line 22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the heating and cooling pulses strategies taught by Kirino into the method of Morishima. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to improve control of the pulse width and pulse interval (Kirino column 14 lines 21 and 22).

**Claims 17** is drawn to the information recording apparatus corresponding to the method of using same as claimed in claim 8. Therefore information recording apparatus claim 17 corresponds to method claim 8, and is rejected for the same reasons of obviousness as used above.

***Allowable Subject Matter***

**11. Claims 2, 4-6, 9, 11, 13-15, 18, and 20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and rewritten in independent form including all of the limitations of the base claim and any intervening claims.



**Regarding claim 2, 5, 6, 9, 11, 14, 15, 18, and 20,** none of the references of record, alone or in combination, suggest or fairly teach the limitations of claims 2, 10, or 19 in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. Although the prior art discloses the information recording method, information recording apparatus, and record medium as respectively claimed in claims 1, 10, and 19 wherein said first trial write step includes: a first test pattern generating step of generating the first test pattern for performing trial write in the trial write area of the record medium (Morishima paragraphs [0040] and [0041]); and an optimum recording power obtaining step of obtaining the optimum recording power from the reproduced signal of the recorded trial write data (Morishima paragraphs [0040] and [0041]), and wherein said second trial write step includes: a second test pattern generating step of generating the second test pattern corresponding to each of the data length sets for performing of trial write (Morishima paragraphs [0048], [0060], and [0061] particularly the discussions regarding the stepwise interpolation of the record strategies and the time axis adjustment, and the illustration in Figure 12), the prior art fails to disclose **a trial write processing step of performing trial write in the trial write area of the record medium by using the optimum recording power and the second test pattern while maintaining fixed pulse width and fixed pulse edge position of recording waveform for one or more particular data length sets and while changing pulse width or pulse edge position of recording waveform for other data length sets in a stepwise manner; and an optimum recording waveform obtaining step of obtaining the optimum pulse width or optimum pulse edge position of recording**

**waveform corresponding to the data length sets from the reproduced signal of the second test pattern corresponding to said other data length sets by using a reference asymmetry value derived from a reproduced signal of recorded trial write data corresponding to the second test pattern corresponding to said one or more particular data sets.**

**Regarding claims 4 and 13, none of the references of record, alone or in combination, suggest or fairly teach the limitations of claims 4 or 13 in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to disclose wherein the optimum recording power in said first trial write step is obtained from a modulation factor of the reproduced signal of the area in which trial write is performed in said step, or obtained from a rate of change in the modulation factor, and wherein the optimum pulse width or optimum pulse edge position corresponding to each of the data length sets in said second trial write step is obtained from an asymmetry that is a ratio of a positive-side peak value to a negative-side peak value relative to an average value level of the reproduced signal of the area in which trial write is performed in said step.**

***Citation of Relevant Prior Art***

**12.** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Kato et al. (US Patent Number 7,075,871 B2)** discloses a method and a device for recording optical data able to improve recording power setting during recording by

means of PWM with a small number of pulses. During the test recording, using a period of a recording channel clock  $T_w$  as the minimum unit, marks having different mark lengths of  $n_1 \cdot T_w$  and  $n_2 \cdot T_w$  ( $n_1 < n_2$ ) are recorded with the same number of  $m$  ( $m < n$ ) light emitting pulses, while successively changing the maximum power  $P_w$  of the recording signals. The recorded marks are reproduced and the mark lengths  $T_1$  and  $T_2$  are measured from the reproduced signals. The recording power can be set by evaluating the deviations  $D_1 = T_1 - n_1 \cdot T_w$  and  $D_2 = T_2 - n_2 \cdot T_w$ .

**Narumi et al. (US Patent Number 6,526,013 B1)** discloses an optical information recording apparatus, an optical information recording method, and an optical information recording medium that enable information signals to be recorded precisely by determining recording conditions such as recording power, edge positions of recording pulses, and the like suitably before recording information signals. An edge test signal generation circuit supplies a test signal for optimizing edge positions of recording pulses. In order to suppress the variation in intervals between edges due to mark distortion caused by overwriting, test recording is carried out using this test signal in a plurality of sectors on the optical information recording medium with a test recording start point being shifted at random in each sector by a recording start point shifting circuit. A system control circuit calculates an average of intervals between edges in test signals reproduced from the plurality of sectors and determines the difference between the average and an original interval between edges in the test signal, thus determining a compensation volume for edge positions.

Art Unit: 2627

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571)270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LaTanya Bibbins/  
Examiner, Art Unit 2627

/Wayne R. Young/  
Supervisory Patent Examiner, Art Unit 2627